

## ABSTRACT

Using a data storage medium that can be rewritten a limited number of times, files can be recorded and reproduced without using any management information for a lead-in area to which a logical sector number is not assigned. A particular object is improving reliability when part of the data cannot be recorded or reproduced because of a scratch or dust. At the same time, all areas within the volume space are managed using this volume/file structure. By twice writing the chaining information that is part of the root directory file management information, and each chaining information having address information for two locations of chaining information recorded thereafter, address information for an unrecorded area and the latest root directory file management information can be detected even when data recording and reproducing are not possible.